

What is claimed is:

1. A laser irradiation device comprising:

a) a laser source for emitting a first laser beam;

b) a first optical system for converting said first laser beam into a second laser beam;

c) a Grating Light Valve™ having a plurality of reflective elements arranged in a predetermined direction for converting said second laser beam into modulated signal beams; and

d) a second optical system for directing said signal beams onto a medium, wherein said second laser beam is linearly polarized in a direction substantially parallel to said predetermined direction.

2. The laser irradiation device according to claim 1, wherein

said first optical system comprises

a polarization direction converter for converting a polarization of said first laser beam.

3. The laser irradiation device according to claim 2, wherein

said polarization direction converter is a phase plate.

4. The laser irradiation device according to claim 3, wherein

said first laser beam has a peak wavelength within the range from 800 nm to 820 nm.

5. A laser irradiation device comprising:

a) a laser source having a plurality of emitters arranged in a first direction for emitting a first laser beam linearly polarized, said first laser beam being polarized in a second direction substantially perpendicular to said first direction;

5           b) a first optical system for converting said first laser beam into a second laser beam;

c) a Grating Light Valve™ having a plurality of reflective elements arranged in a predetermined direction for converting said second laser beam into modulated signal beams; and

10           d) a second optical system for directing said signal beams onto a medium, wherein said first optical system comprises a halfwave plate for rotating a polarization of said first laser beam by 90 degrees.

6. The laser irradiation device according to claim 5, wherein

15           said first laser beam has a peak wavelength ranging from 800 nm to 820 nm.

7. A laser irradiation device comprising:

a) a laser source having a single emitter for emitting a first laser beam substantially linearly polarized;

20           b) a first optical system for converting said first laser beam into a second laser beam;

c) a Grating Light Valve™ having a plurality of reflective elements arranged in a predetermined direction for converting said second laser beam into modulated signal beams; and

25           d) a second optical system for directing said signal beams onto a medium,

wherein said second laser beam is linearly polarized in a direction substantially parallel to said predetermined direction.

8. The laser irradiation device according to claim 7, wherein

5        said first laser beam has a peak wavelength within the range from 800 nm to 820 nm.

9. An image recorder for modulating a laser beam to record an image on a recording medium, said image recorder comprising:

10        a) a laser source for emitting a first laser beam having a peak wavelength ranging from 800 nm to 820 nm;

      b) a Grating Light Valve™ for modulating said first laser beam in response to an image signal to produce a zero-order diffracted signal beam; and

15        c) an imaging optical system for irradiating said recording medium with said zero-order diffracted signal beam.

10. The image recorder according to claim 9,

wherein said Grating Light Valve™ comprises

a plurality of reflective elements arranged in a predetermined direction, and

20        wherein said first laser beam is linearly polarized in a direction substantially parallel to said predetermined direction.

11. The image recorder according to claim 10, further comprising

a polarization direction converter disposed between said laser source and said

25        Grating Light Valve™ for converting a polarization direction of said first laser beam.

10083074.10001

12. The image recorder according to claim 11, wherein  
said polarization direction converter is a phase plate.

5 13. The image recorder according to claim 9,  
wherein said laser source has a plurality of emitters arranged in a first direction,  
said first laser beam being polarized in a second direction substantially perpendicular to  
said first direction,

said image recorder further comprising

10 d) a halfwave plate disposed between said laser source and said Grating light  
Valve™ for rotating a polarization of said first laser beam by 90 degrees.

14. The image recorder according to claim 10, wherein

15 said laser source emits said first laser beam linearly polarized in the direction  
substantially parallel to said predetermined direction.

090304.1000T